



Linux/BSD Operating System Management

Linux and BSD are operating systems that offers technology solutions built on the benefits of open source software and strengthened through alliances with technology leaders. With the TELEHOUSE Management Framework, TELEHOUSE provides the highest level of support and management to ensure the availability and performance of your Linux environment.

Correlation Engine Technology

TELEHOUSE's correlation engine technology includes APIs for reading alerts and messages from a variety of tools such as HP OpenView, NetIQ AppManager and HP Insight Manager, among others. The correlation engine filters, correlates, validates, and auto-resolves routine alerts, allowing our analysts to focus on complex and proactive analysis of pre-screened, validated events. On average, 98% of incoming alerts and messages are automatically resolved by the correlation engine. By capturing and prioritizing the relevant data, the correlation engine enables exceptionally efficient incident management that improves your system performance.

Expert Analysts

TELEHOUSE dedicated Linux and BSD experts ensure high performance and availability of your environment. Support analysts are available 24x7 to respond to system events and for direct customer support through phone or email. With over a decade of focused experience in managed services and thousands of applications under management, TELEHOUSE successfully manages complex environments.

ITIL Best Practices

TELEHOUSE employs the IT Infrastructure Library (ITIL) Service Delivery and Service Support processes of Incident, Problem, Configuration, Change, Release, Service Level, Availability, and Capacity Management. These standardized ITIL processes define our services and ensure consistent and measurable performance. TELEHOUSE's Management Action Plans (MAPs) are incident management best practices which correspond to every event type that is monitored.

Managed Components

1) Server Availability:

TELEHOUSE will monitor and verify that the application components are running and functional. Critical system processes will also be monitored to ensure they are running within established parameters. Server restarts will be completed in the event of a system crash, panic or halt, and the acceptance of client connections will be verified.

2) Log File Monitoring:

TELEHOUSE will monitor operating system logs looking for specific keywords and phrases indicating critical issues to investigate. Additional keywords can be added at any time and keywords that are determined to be ineffective can be removed. The following key words are suggested for monitoring log files.

3) Cluster Services:

Servers running VCS in a clustered environment will be monitored for all of the same events as non-clustered servers. In addition, clustered servers will be monitored for failover, node down, group down, and group owner changes in the case of a failover event. Database connectivity for both nodes can also be monitored through TELEHOUSE's database monitoring offering.

4) Disk Subsystem Availability:

TELEHOUSE will monitor and alert on critical issues with underlying physical or logical disk volumes.

5) Storage Allocation Monitoring and Management:

TELEHOUSE will monitor and manage storage for all disk volumes.

Managed Components for Linux/ BSD

- Server Availability
- Log File Monitoring
- Cluster Services
- Patch Management
- Storage Allocation
- Disk Subsystem Availability
- Performance Management and Statistical Tracking
- Server Hardware

TELEHOUSE Management Framework Value

- Leverage TELEHOUSE's best-of-breed monitoring technologies and proven implementation processes to provide rapid and effective management.
- Gain visibility into your IT environment by viewing ticket, performance, and trend details through the customer portal.
- Rely on expert analysts, ITIL best practices and Management Action Plans (MAPs) to improve the stability and availability of your environment.

For more information visit www.TELEHOUSE.com



Event Types Monitored

- Communications Failure
- Disk Performance Problems
- System Performance Problems
- File System Availability
- File System Capacity
- Inetd Unavailable
- Lpd Unavailable
- Memory Performance Problem
- Processor Performance Problem
- Named Unavailable
- Sendmail Unavailable
- Server Unavailable
- SSHD Unavailable
- Syslogd Unavailable
- Cluster Service Availability
- Cluster Applications Availability
- Critical Cluster Processes
- Cluster Failover
- Cluster Heartbeat
- Cluster Log Monitoring

6) Performance Management and Statistical Tracking:

TELEHOUSE will identify, troubleshoot and resolve performance issues while key system statistics are collected and warehoused on a historical basis.

7) Server Hardware:

Server generated SNMP traps are used to indicate events that are important to the health and operation of each supported server. These events are device availability, CPU and memory utilization, and bandwidth utilization through interface performance charts. Additionally, the use of MIB II support, interface, and IP-level visibility is supported as defined by RFC 1213. Customers can view vital information pertaining to the health and status of their servers in the customer portal.

Example Event Resolution

The following example demonstrates the Silver, Gold, and Platinum service responses for a common Linux event: **xinetd Unavailable**.

TELEHOUSE Silver

For TELEHOUSE Silver services, the customer will receive notification of validated events. A TELEHOUSE Analyst will consult the Management Action Plan for this event and perform the following steps:

- 1) Attempt to connect to the server via alternate methods such as Telnet or Remote Console
- 2) Contact the customer with the information regarding the event

On average, the initial response time is less than five minutes.

Performance Statistics Collected

- CPU Utilization
- CPU Load Average
- Free Memory
- Disk Transactions
- Others on request

TELEHOUSE Gold

For TELEHOUSE Gold services, a Primary Analyst is assigned to every account and understands the configuration of the environment. Rather than escalating directly to the customer, the same event is now escalated to a Primary Analyst. The Primary Analyst consults their pre-defined set of troubleshooting and resolution steps in the Management Action Plan.

In addition, the Primary Analyst will also watch for a trend of issues to proactively advise the customer of configuration changes to stabilize the environment.

TELEHOUSE Platinum

For TELEHOUSE Platinum services, the Primary Analyst will also understand the architecture of the environment. With this more in-depth understanding of your environment, the Primary Analyst can perform many proactive tasks such as performing patch maintenance and installation, perform changes to optimize the operating system, install and apply fixes to security vulnerabilities according to industry standards, install latest anti-virus data files (any applicable software fees to be paid by customer), and perform root cause analysis of cluster failover events.



TELEHOUSE Silver, Gold, Platinum Support Overview	Silver	Gold	Platinum
→ 24x7 Support Center coverage	✓	✓	✓
→ Event correlation and validation with correlation engine technology	✓	✓	✓
→ Customer portal (system health, ticket reports, performance reports)	✓	✓	✓
→ Ticket tracking, communication, notification and escalation management	✓	✓	✓
→ Management Action Plans with validation and notification steps	✓	✓	✓
→ Incident management (detection, classification, notification, recording, and closure)	✓	✓	✓
→ Project management for installation	✓	✓	✓
→ Log file parsing using specific keywords	✓	✓	✓
→ Validation of operating system response to requests	✓	✓	✓
→ Individual Operating System instance availability monitoring (additional instances sold separately)	✓	✓	✓
→ Configuration file monitoring	✓	✓	✓
→ URL monitoring and reporting	✓	✓	✓
→ Management Action Plans with validation, troubleshooting, resolution and escalation steps	✓	✓	✓
→ Incident resolution based on MAP procedures (restarts of processes, services, servers, etc.)		✓	✓
→ Primary Analyst assigned to every account for incident investigation, diagnosis, and control		✓	✓
→ Proactive problem identification		✓	✓
→ Configuration identification, status, verification and audit		✓	✓
→ Availability, response time, trend, and performance reporting and analysis		✓	✓
→ Patch reporting and analysis		✓	✓
→ Analyze repetitive critical log file errors and suggest corrective actions		✓	✓
→ Validate database and web server dependencies for Linux		✓	✓
→ Advise of request throughput and response time discrepancies		✓	✓
→ Project management resource assigned for installation and ongoing account maintenance			✓
→ Complete problem management with incident root cause analysis, when appropriate			✓
→ Enterprise account management with complete understanding of architecture			✓
→ Change management coordination, review, risk assessment and justification*			✓
→ Release management planning, deployment and acceptance*			✓
→ Monitor ticket activity (24 hour report) and work to reduce false positive and non-critical items			✓
→ Streamline resolution procedures to reduce resolution times of tickets			✓
→ Configuration management (identification, planning, control and optimization)			✓
→ Install and apply fixes to security vulnerabilities according to industry standards			✓
→ Install latest anti-virus data files (any applicable software fees to be paid by customer)			
→ Root cause analysis of cluster failover events (post-mortem)			✓

* May require custom scripting. Upon customer request and approval of additional fees, if applicable, TELEHOUSE will develop custom scripts to enable additional services.



Support Options Summary TELEHOUSE Silver

Infrastructure and Application Monitoring

- Customer Portal Access*
- Project Management*
- Incident Management (Validation, Notification, and Escalation)
- Reporting

TELEHOUSE Gold

Infrastructure and Application Resolution

- All the features of Silver, plus
- Incident Resolution
- Proactive Problem Identification
- Configuration Identification
- Reporting and Analysis

TELEHOUSE Platinum

Infrastructure & Application Management. All the features of Gold, plus

- Problem Management (Error Control, Root Cause Analysis)
- Change Management
- Configuration Management
- Release Management
- Reporting and Proactive Services (Performance Tuning, Customized Services)

* Please see the Consulting Services technical specification for details.

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Consulting Services for Silver, Gold and Platinum

TELEHOUSE will perform the following activities as part of its engagement service:

- Audit and document site requirements
- Establish and maintain Virtual Private Network (VPN) connectivity
- Deploy Client Agent management tools
- Configure the customer portal for customers to view performance trends and analysis

These services are detailed in the technical specification for TELEHOUSE Consulting Services.

Version and Patch Support Policy:

TELEHOUSE supports vendor-supported software versions defined as those versions that are under maintenance and being patched by the vendor.

Customers must have maintenance agreements in place and systems should be patched to within six months of the vendor's most recent available patches.

Exceptions to this as well as overall supported applications, will only be considered on a special approval basis and will require an engineering review and contract addendum.

Linux Vendors Supported:

Redhat, CentOS, Debian, Ubuntu, SUSE